F. V. Coville exhibited a new form of collecting knife, the cotton knife of the inspectors of baled cotton.

TUESDAY, AUGUST 26.—In three short notes by Dr. B. D. Halsted, attention was called to the occurrence of double flowers in wild Convolvulus sepium; to peculiarities of the pollen of Epilobium palustre var. oliganthum; and to a supposed hybrid between Tragopogon porrifolius and T. pratensis.

Miss E. Porter, of Cornell University, described a mode of spore discharge in a species of Pleospora in which the spores are expelled simultaneously after the elongation of the inner coat of the ascus and its circumscissile dehiscence.

H. L. Bolley, of Purdue University, explained the results of a large series of experiments on potato scab which he is confident is a bacterial disease. The author also discussed the histology and biology of the disease fully and gave an outline of infection and culture experiments. The work was very highly commended by Dr. Burrill who had given attention to the disease himself. Dr. Arthur pointed out the curious fact that in order to succeed with infection experiments the tubers must not only be attached to the plant but must be in a healthy growing condition.

The officers elected for next year are: President, Wm. M. Canby, of Wilmington, Del.; Vice-President, L. M. Underwood, of Syracuse, N. Y.; Secretary, B. T. Galloway, Washington, D. C.

BRIEFER ARTICLES.

Excursion of the Botanical Club.—The botanists were excused on Monday afternoon of the Association meeting, to take the promised excursion to the "Shades of Death." About seventy registered for the trip, and at 12:30 a special train, furnished with the compliments of the I. D. & W. Railway, steamed out of the Union Station for a quick run of nearly fifty miles towards the west. Upon reaching South Wavelaud carriages met the party and they were soon driving across the country a distance of seven miles to a young summer resort known to its management as "Garland Dell," but to the region thereabouts as the "Shades of Death." A deep and narrow gorge has been cut into the heavy subcarboniferous sandstones, a stream of water and abundant springs keep it moist, and the result is not only some beautiful scenery, but also a lavish display of such plants as delight in cool and damp and shady spots. The botanical crowd was soon scattered into little groups that kindred tastes brought together. There were collectors of Myxomycetes, of parasitic

fungi, of saprophytic forms, of mosses and ferns, and flowering plants. Altogether it was a company well distributed in interest as well as in locality. From Dr. Sereno Watson on the east to Mr. Fletcher of Canada on the north, and Dr. Bessey on the west, and southward to Frank Earle on the Gulf, is the range represented by that collection of botanists. Those who live at intermediate stations need not expect to have their names mentioned, but they were there, over sixty strong.

These sandstone gorges are in the midst of untouched Indiana forest, and in the evening dinner was served on tables that were placed in the open air under the trees. The meal was ample and so were the appetites, and the drive back through the moonlight to the special train brought to a close one of the most delightful botanical excursions the Club has ever enjoyed.

After dinner the Club passed the following resolutions:

Resolved, That we do hereby express our most hearty thanks to the local committee for the thoughtfulness and care with which all the details of the excursion were planned and carried out so as to give to the party a most pleasurable entertainment; to Mr. R. B. F. Pierce, of the Indianapolis, Decatur and Western Railway, to whom we are indebted for free transportation on the railroad, and to Superintendent L. A. Boyd for his courtesy in accompanying the train and giving personal attention to our comfort and safety.

Resolved, furthermore, That we tender our hearty thanks to Mr. J. W. Leech for the satisfactory repast with which we were regaled at his delightful summer resort, and for the kindly attention he gave us as his guests.

Preliminary notes on Isopyrum biternatum.—Following a suggestion made to the writer by J. M. Coulter, I began some time since a study of the little plant whose name forms the subject of this paper. It is an insignificant member, in point of size at least, of the Ranunculaceæ. In general appearance it greatly resembles its near relation, the little Anemonella, both as to size and structure. It may be most easily distinguished by an examination of the fruit or of the root. The latter presents the appearance of a chain of tuberous-like thickenings, gradually diminishing in size toward the growing ends of the roots.

The fruit is not an achene, as in Anemonella, but a pod, or rather four pods forming a spreading sort of quadrangle. The number, however, is not invariable, occasionally but two, frequently three, appearing in maturity, though the embryology shows normally four. The flower, also, is not subject to the remarkable variability exhibited by Anemonella, having as a rule five petaloid sepals.

A study of the micro-chemical character of the tuberous-like thickenings of the roots revealed the absence, much to my surprise, of any deposits of starch therein. Further reactions revealed the presence in the cells of the subepidermal tissue of small quantities of aleurone. Still further investigation showed the presence in the fundamental tissue of inulin. This appeared the chief storage product of the plant. The same